

Application No. 10/620,553

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant : Moshe EIN-GAL
Appl. No. : 10/620,553
Filed : July 17, 2003
Title : SHOCKWAVE GENERATING SYSTEM
Group Art Unit: 3737
Examiner : Amanda L. Lauritzen
Docket No. : 1307EIN-US
Honorable Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

AMENDMENT

Sir:

In response to the Office Action of March 11, 2008, please amend the above-identified application as follows:

OK TO ENTER: /A.L./

In the claims:

1-19. (canceled)

20. (Currently amended) A shockwave generating system comprising:

- a first shockwave source device comprising an acoustic wave transducer with a longitudinal axis of symmetry;

- a reflector which is axisymmetric about said longitudinal axis of symmetry;

- a propagation medium that fills an inner volume of said reflector, said acoustic wave transducer being separated from said reflector by the propagation medium, wherein said reflector is arranged with respect to said first shockwave source device so that outwardly radiated acoustic waves from said first shockwave source device propagate in the propagation medium and are reflected by a reflective surface of said reflector towards a focus, said first shockwave source device fitting in an aperture which is formed in said reflector and located on said longitudinal axis of symmetry, said aperture being sealed by a sealing ring;

- a first membrane that covers an open end of said first shockwave source device non-parallel to said longitudinal axis of symmetry in order to seal said first shockwave source device from ingress therein of the propagation medium, said first membrane being shaped differently from the reflective surface of said reflector;

- a second membrane that covers an end face of said reflector; and

- a second shockwave source device disposed in said aperture and adapted to emit acoustic waves, wherein said second shockwave source device sealingly passes through said first membrane.

21. (Canceled)

22. (Previously presented) The shockwave generating system according to claim 20, wherein said reflector comprises an at least partially parabolic reflector.

23. (Previously presented) The shockwave generating system according to claim 20, wherein first shockwave source device comprises a cylindrical acoustic wave transducer comprising an excitable membrane and an excitation device operative to move said excitable membrane to generate shockwaves that propagate in said propagation medium.

24. (Previously presented) The shockwave generating system according to claim 20, wherein said second shockwave source device comprises a spherical acoustic wave transducer, which repulse a spherical membrane to produce shockwaves in the propagating medium.

25. (Previously presented) The shockwave generating system according to claim 20, wherein said first and second shockwave source devices are arranged with respect to one another to focus on a common focus.

26. (Previously presented) The shockwave generating system according to claim 20, wherein said first and second shockwave source devices are arranged with respect to one another to focus on different foci.

27. (Previously presented) The shockwave generating system according to claim 20, wherein first shockwave source device comprises a conical acoustic wave transducer comprising an excitable membrane and an excitation device operative to move said excitable membrane to generate shockwaves that propagate in said propagation medium.

28. (Previously presented) The shockwave generating system according to claim 20, wherein said second shockwave source device comprises a planar acoustic wave transducer comprising an excitable membrane and an excitation device operative to move said excitable membrane to generate shockwaves that propagate in said propagation medium, and a focusing lens adapted to focus these shockwaves to a focus.

29. (Previously presented) The shockwave generating system according to claim 20, wherein said first membrane is planar and generally perpendicular to said longitudinal axis of symmetry.

30. (Previously amended) The shockwave generating system according to claim 24, wherein said spherical membrane has a rounded portion that curves outwards towards and points to said second membrane that covers the end face of said reflector.

31. (Previously presented) The shockwave generating system according to claim 20, wherein said second shockwave source device comprises one or more point sources, wherein fast discharges of electrical energy between tips of closely spaced electrodes give rise to a sequence of spherical waves in the propagating medium.

REMARKS

Applicant has carefully studied the outstanding Official Action mailed on March 30, 2009. This response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

Claims 20, 22-25, 28 and 30 stand rejected under 35 USC §103(a) as being unpatentable over Hassler et al in view of Grunewald et al.

Claim 26 stands rejected under 35 USC §103(a) as being unpatentable over Hassler et al in view of Grunewald et al and Reichenberger.

Claim 31 stands rejected under 35 USC §103(a) as being unpatentable over Hassler et al in view of Grunewald et al and Hoff et al.

Applicant notes with gratitude the indicated allowability of claim 21. Claim 20 has thus been amended with the recitation of claim 21 and claim 21 has been canceled.

Accordingly, claims 20 and 22-31 are respectfully deemed patentable. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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